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## **Abstract**

The invention pertains to a process for preparing spherical oxide particles comprising the steps of shaping a starting material comprising an oxide hydrate into particles of substantially constant length by leading the material to a set of two rolls rotating towards each other followed by leading the material to a roll equipped with grooves to form rod-type shapes, cutting the rod-type shapes into particles of substantially constant length, converting the thus formed particles into spheres, and heating the particles to convert the oxide hydrate into an oxide. The process results in particles in which there is substantially no difference in density between the core portion and the shell portion of the particles, which results in a high abrasion resistance. The particles prepared by the claimed process are particularly suitable for the preparation of hydroprocessing catalysts, more in particular for the preparation of hydroprocessing catalysts suitable for the hydroprocessing of heavy hydrocarbon feeds.